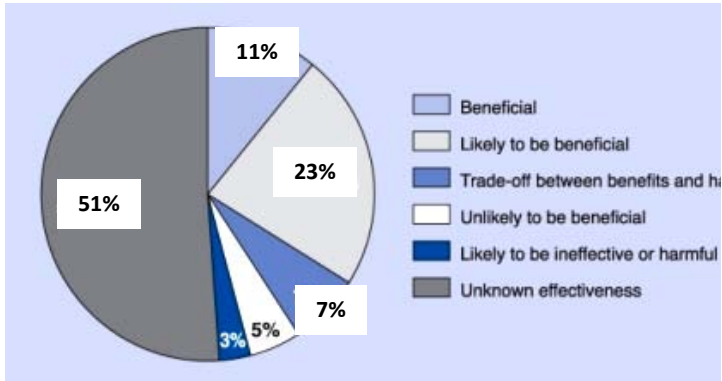


Evidence-based Veterinary Medicine

JM Gay DVM PhD DACVPM 11/10

Key Concepts:

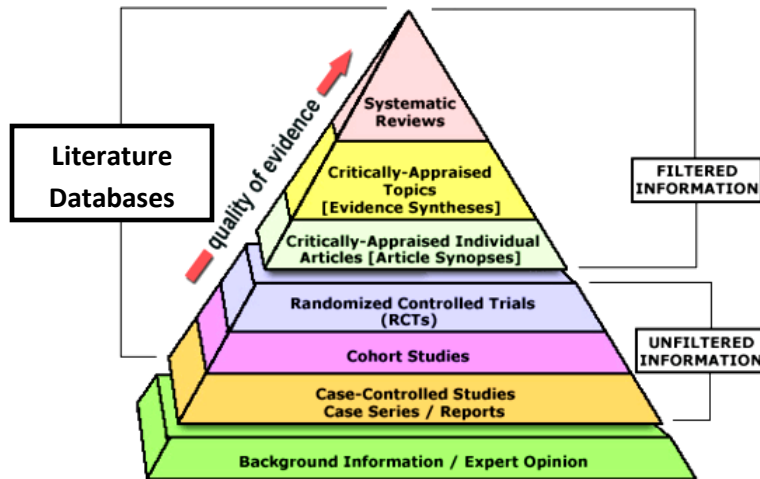


Percentage of prevention and treatment interventions for important clinical conditions by evidence category

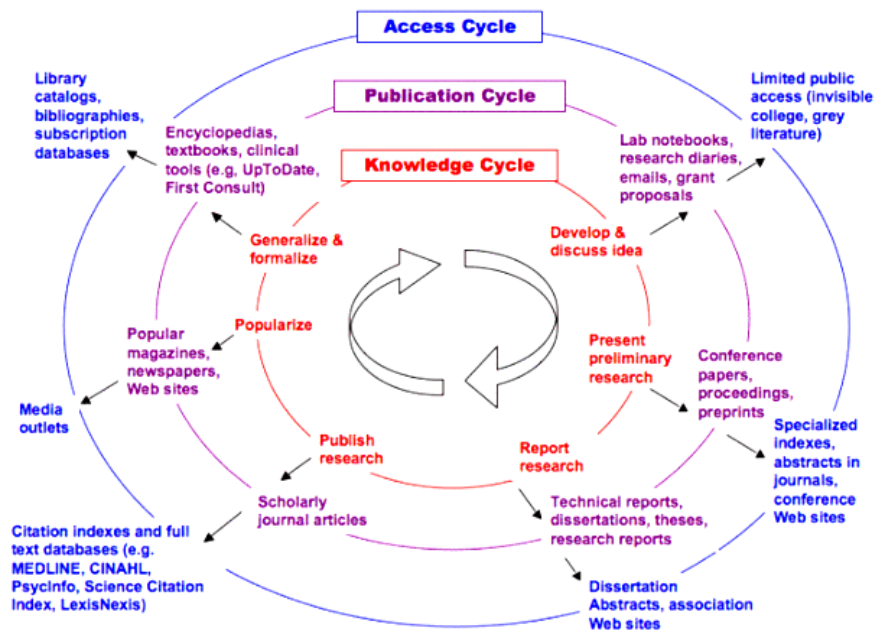
<http://clinicalevidence.bmj.com/cweb/about/knowledge.jsp>

The Evidence Strength Pyramid

<http://www.ebmpyramid.org/home.php>



The Scientific Knowledge / Publication / Access Cycle



<http://ebp.lib.uic.edu/nursing/?q=node/7>

Definitions:

- **Evidence:** That which supports something or shows that something is the case. Depending on how it was obtained, evidence varies greatly in strength. Note that a set of evidence can be correct but the underlying theory that the promoters allege the evidence supports can still be wrong.
- **Empirical Evidence (Facts):** Knowledge obtained by looking rather than reasoning or feeling. In the scientific sense, that knowledge comprised of the objective findings (but not broad interpretation) derived from analysis of objective data obtained from formal observational or experimental procedures that are potentially repeatable (verifiable) and that meet currently accepted standards of design, execution, and analysis. The strongest empirical evidence is obtained from rigorous methods incorporated into an experiment designed to have a clear, unequivocal supporting or refuting outcome. Empirical evidence is weakened by the opportunity for other explanations, due to weakness in methods, to account for the findings.
- **Dogma:** Those beliefs held as established or put forth as an authoritative or expert opinion, often contained in a secondary or tertiary source, but that have little or no supportive empirical evidence from primary sources. Medical dogma is usually derived from unevaluated biological hypotheses and uncritical observation or experience without recognition of the effects of chance, natural biological variation, and observer bias. An unknown but significant portion of medical practice falls into this category. Repetition across secondary and tertiary sources or the number of people, whatever their qualifications, that hold this belief does not change the status of such information.
- **Evidence-based (population-based) medicine (EBM):** "An approach to practice in which the clinician is aware of the evidence in support of their clinical practice and the strength of that evidence" (McMaster). EBM is the use of systematic observation of the clinical patient and the rules for empirical evidence to critically appraise and interpret information from clinical research (causation, prognosis, diagnostic tests, and treatment strategies) to apply to that individual patient. The goal of EBM is to increase the likelihood of a better clinical outcome for an individual patient because of making better clinical decisions and doing so in a more efficient, cost-effective manner. EBM goes beyond the traditional focus on reasoning based on microbiology, pathophysiology, and pharmacology, beyond the traditional reliance on authority or expert opinion (dogma) and beyond the traditional use of uncritically and unsystematically evaluated clinical experience (*JAMA* 268:2420-2425 (1992), *BMJ* 310:1122-1126 (1995), *J Royal Soc Med* 88:620-624(1995)).

Books:

- Cockcroft P, MA Holmes (2003). Handbook of Evidence-Based Veterinary Medicine
- Fletcher, RH & SW (2005). Clinical Epidemiology: The Essentials, 4th ed.
- Hayes RB, et al. (2005). Clinical Epidemiology: How to do clinical practice research, 3rd ed.
- Hulley SB et al. (2007). Designing Clinical Research: An Epidemiologic Approach, 3rd ed.
- Ramey DW (2007). Evidence-based Veterinary Medicine. *Veterinary Clinics of North America: Equine Practice* 23(2)
- Schmidt, PL (2007). Evidence-Based Veterinary Medicine. *Veterinary Clinics of North America: Small Animal Practice* 37(3)

Representative On-line Sources:

- CEBM – Center for Evidence-based Medicine, U Oxford - <http://www.cebm.net/?o=1011>
- CEVM – Centre for Evidence-based Veterinary Medicine - <http://www.nottingham.ac.uk/CEVM/Index.aspx>
- EBVMA Evidence-based Veterinary Medicine Association- <http://www.ebvma.org/>
- Evidence-based practice – UW HealthLinks - <http://healthlinks.washington.edu/ebp>
- The Cochrane Collaboration - <http://www.cochrane.org/>

My materials: (index page - <http://www.vetmed.wsu.edu/courses-jmgay/>)

- Clinical Epidemiology and Evidence-based Medicine Glossary
<http://www.vetmed.wsu.edu/courses-jmgay/GlossClinEpiEBM.htm>
- Guidelines for Assessing Professional Information
<http://www.vetmed.wsu.edu/courses-jmgay/EvalGuide.htm>
- VMS 576 - Introduction to Clinical Research: Links & resources
<http://www.vetmed.wsu.edu/courses-jmgay/ClinicalResearchIntro.htm>
- WWWeb Epidemiology & Evidence-based Medicine Sources for Veterinarians
<http://www.vetmed.wsu.edu/courses-jmgay/EpiLinks.htm>

Wikis:

- Cognitive bias - http://en.wikipedia.org/wiki/Cognitive_bias
- Evidence-based medicine - http://en.wikipedia.org/wiki/Evidence-based_medicine